



HP
Procurve Switches
2524, 2512, and 4108gl

Command Line Interface
Reference Guide

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1. Introduction

This document provides a summary of the commands supported on the HP ProCurve 2524, 2512, and 4108gl switches. It is divided into sections that correspond to different modules or features of the HP switches. Not all sections will apply to all HP switches since each switch may only support a subset of the total feature set that is described in this document.

1.1 Conventions

Command descriptions use the following conventions:

- Vertical bars “|” separate alternative, mutually exclusive elements.
- Square brackets “[]” indicate optional elements.
- Braces “<>” indicate a required choice.
- Braces within square brackets “[<>]” indicate a required choice within an optional element.
- **Boldface** indicates commands and keywords that are entered literally as shown.
- *Italics* indicates arguments for which you must supply a value.
- If the **no** form of a command has exactly the same keywords and arguments as the command, then **no** appears in square brackets at the beginning of the command. Otherwise, the **no** form of the command is described separately.
- If the **no** form of a command is not explicitly described, then it simply negates the command. For example, if the command enables a feature, then the **no** form of the command would disable it. Also, if the a command was used to add a configuration item, then the **no** form of the command would remove it.

1.2 Argument Types

The following argument types are recognized by the CLI and are used in the command syntax throughout this document:

- **mac-addr** – For example, 0060b0-885a80 or 0060b0:885a80.
- **ip-addr** - IP address in dotted decimal notation. For example, 10.0.16.80
- **ip-mask** - This is syntactically expressed the same way as ip-addr.
- **port-number** - Devices with fixed port configurations accept port numbers specified as integers. Modular devices accept port numbers specified with slot and port number identifiers. For instance, port "A1" indicates Port 1 in Slot A.

There are three "special" port designations in the switch. You may specify the monitoring port by using "mp"; you may specify a trunk port by using "trkX", where X identifies the numerical trunk group.

- **port-list** - A port list specifies a group of ports for which the operation being performed should be applied. A port list consists of individual port identifiers or ranges of ports separated by commas (e.g., A1-B8, C4, D1). This list includes the "special" port designations described under port-number.
- **vlan-id** - The 802.1Q VLAN identifier.

1.3 Privilege and Context levels

The new CLI will support two privilege levels (operator and manager) and several context levels. As each context level is entered, the context information is displayed as part of the command prompt. When a context specific command is executed, the context information is applied to the particular command. For instance, when you attempt to enter the interface context level, you must specify a port number (see **interface ethernet**). Subsequent commands that affect port behavior (e.g., flow-control) will be applied to the port number specified when entering the level, so the specified port need not be re-specified on the command line.

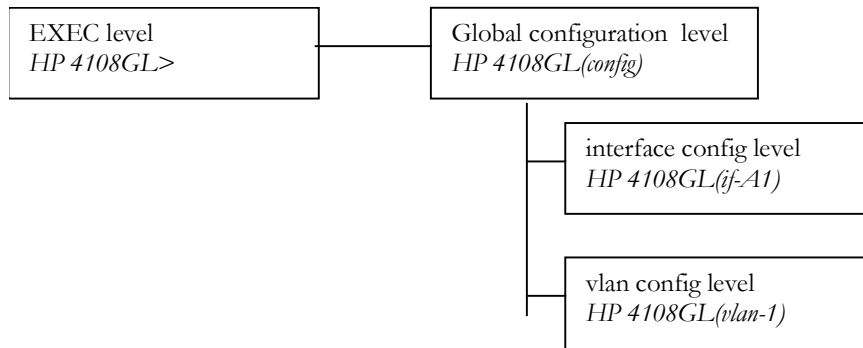


Figure 1: Command and context levels

When you log onto the switch, you will be placed at the operator EXEC level and the system will display the following prompt:

```
HP 4108GL>
```

If an operator password has been set (see **password** in the global configuration section), then the system would have displayed the following prompt before entering the operator EXEC level:

```
Password:
```

You can enter the manager EXEC level from the operator EXEC level by using the **enable** command. If a manager level password has been configured, then you will be prompted for the manager password after executing the **enable** command.

1.4 The Command Line Interface

The new CLI will not be case sensitive. As a short cut, you can abbreviate commands and keywords as long they contain enough letters to be distinguished from any other currently available commands or keywords.

When the command text exceeds the length of the command line, the current command line will scroll upwards, yet the cursor will shift to the first character on the last line on the screen. This is opposed to shifting the command line horizontally each time the command exceeds the number of characters that can be displayed at one time on the screen.

1.5 System Help

You can enter **help** or **?** at a particular command level to see the commands available at that level. You can enter a command followed by **help** or **?** in order to get the system to display the command description for that particular command. The command description would be similar to what is presented for each command in the Command Reference section of this document.

In order to see the list of possible word completions or to complete the current word, you may use the Tab key immediately after the last letter of the last keyword on the command line. For example, if the system was currently in the global configuration level and you typed **tab** immediately after the **t** in step (1), the system would display the options seen in section (2) and the system would return to the configuration level prompt with the partially completed command line seen in (3):

```
(1)  HP 4108GL(config) t
(2)  trunk
      trap
      trap-send-authentication
      telnet-server
(3)  HP 4108GL(config)t
```

If you had already typed in **trap-** on line (1) and then pressed the **tab** character, the system would complete the keyword **trap-send-authentication**, for it is the only possible completion for **trap-**, and display the completed command line as shown below:

1. HP 4108GL(config) trap-
2. HP 4108GL(config) trap-send-authentication

1.6 Command Line Editing

Before you press **return**, the current command line can be edited using special keys including arrows and control characters. The following table describes the supported command editing keys and their function:

Keystroke	Function
Ctrl-A	Jumps to the first character of the command line.
Ctrl-B; left arrow	Moves the cursor back one character.
Ctrl-C	Escapes and terminates prompts and lengthy tasks.
Ctrl-D	Deletes the character at the cursor.
Ctrl-E	Jumps to the end of the current command line.
Ctrl-F; right arrow	Moves the cursor forward one character.
Ctrl-K	Deletes from the cursor to the end of the command line.
Ctrl-L; Ctrl-R	Repeats current command line on a new line.
Ctrl-N; down arrow	Enters next command line in the history buffer.
Ctrl-P; up arrow	Enters previous command line in the history buffer.
Ctrl-U; Ctrl-X	Deletes from the cursor to the beginning of the command line.
Ctrl-W	Deletes last word typed.
Esc B	Moves the cursor backward one word.
Esc D	Deletes from the cursor to the end of the word.
Esc F	Moves the cursor forward one word.
Delete; Backspace	Erases mistake when entering a command; reenter command after using this key.

2. Command Summary

2.1 User EXEC Commands

enable

Enters the manager EXEC level. If a manager password is set, the system will first prompt for the password. Echoing is disabled while you enter the password. Initially there are no passwords for the two levels of users in the system: manager and operator. When you first connect to the console or telnet into the system, you will be placed into the Operator EXEC level. At that time, you can enter the above **enable** command without a password in order to be granted manager access to the switch and to be placed into the manager EXEC level. Passwords are set and changed through the **password** command at the global configuration level.

configure [terminal]

Used to enter the global configuration level.

end

This command sets the current command or context level to the manager EXEC level.

exit

This command sets the current command level to the previous command level. At the operator EXEC level, this command acts the same as **logout**.

interface [ethernet] <port-list>

Enters the Ethernet interface configuration context for the port-list.

logout

Terminates this console/telnet session.

menu

Used to enter the menu system. For more information, see the Console Menu section of this document.

setup

Used to setup initial switch configuration.

[no] page

Toggles the paging mode for display commands so that the “—more —” will appear or not appear.

repeat

Repeatedly executes the previous command until a key is pressed.

vlan <*vlan-name* | *vlan-id*>

Enters the VLAN interface configuration context for the VLAN.

2.2 Diagnostic Commands**boot [system [flash <primary | secondary>]]**

Performs cold reboot of switch.

write terminal

This command displays the running configuration.

write memory

This command saves the running configuration to Flash.

erase startup-config

Deletes the configuration stored in flash so that the switch will be reverted to its default configuration upon reboot.

erase flash <primary | secondary>

Deletes the configuration stored in flash so that the switch will be reverted to its default configuration upon reboot.

copy tftp <startup-config | flash> <ip-addr> <remote-file>

[primary | secondary]

Retrieves a configuration or OS file on the remote host, and overwrites the switch's corresponding file with the remote file.

copy <startup-config | running-config | crash-log | event-log | crash-rec | *Command*>
tftp <ip-addr> <remote-file>

This command writes the switch's configuration file, crashrec, eventlog or the output from a command specified by *Command* to the remote file on the remote host.

show startup-config

Displays the configuration stored in flash.

show running-config

Displays the configuration stored in flash.

show boot-history

Displays the switch shutdown history.

kill

This command kills all other active sessions.

show logging [-a] [<search-text>]

Displays the switch's event log. If -a is specified then entire internal switch log is displayed. If *search-text* is specified then only events that contain that text are displayed.

print <command>

Used to execute a command and captures its output using a terminal emulator. This command will display "Press RETURN when ready..." to allow the terminal emulator to be set up to for the capture and "Press RETURN when done..." once the output is complete.

show history

Displays the current command history.

reload

Performs a warm reboot.

clear arp

To clear the arp cache of all non-permanent entries.

clear intrusion-log

To clear the intrusion log.

clear statistics [ethernet] <port-list>

To reset counters displayed by the console. If a new console session is initiated, the counters will revert back to the values maintained by the switch hardware.

telnet <ip-addr>

To initiate a telnet session with another network device.

telnet <0..15>

To initiate a telnet session to a member switch in the stack.

Parameters:

- <0..15> specifies the number of the switch to be contacted.

getmib <object-name> [<object-name> ...]

Retrieves and displays the MIB object defined by object-name.

walkmib <object-name>

This command shows a group of managed object values.

setmib <*object-name*> <*type*> <*value*> [<*object-name*> <*type*> <*value*> ...]

This command sets the MIB object defined by *object-name*. The options for the *type* parameter are case sensitive as shown below:

-i	Integer
-o	Octet string
-d	Object identifier
-a	IP address (nnn.nnn.nnn.nnn)
-c	Counter
-g	Gauge
-t	Time tick
-u	Unsigned integer
-D	Display string (“value”)
-N	Null

show version

Displays software version information.

show flash

Displays software version information for images in flash.

show tech

Displays switch information needed by HP support for diagnostics.

copy xmodem < startup-config | flash [primary | secondary]>

Retrieves a configuration file using the Xmodem protocol and then writes the retrieved file to the switch's flash.

copy <startup-config | running-config | crash-log | event-log | crash-rec | *Command*>

xmodem [pc | unix]

Writes either the configuration file, crashrec, eventlog, or the output from a command specified by *command* using the Xmodem protocol.

link-test <mac-addr> [vlan <vlan-id>] [repetitions <1..999>] [timeout <1..256>]

Tests the connection to a MAC station on the LAN by sending a 802.2 test packet to a specific target node on a network directly attached to a port in that LAN. The target node must be able to respond to this test packet with an 802.2 Test Response packet in order for the test to work. The switch produces the following output if the link test succeeds:

```
link-test passed
```

otherwise, the following is displayed:

```
link-test failed
```

Parameters:

- <mac-addr> - MAC address of the station to send link test to.
- **vlan** <vlan-id> - Expected VLAN on which the station is expected to be present. If this argument is not present then the VLAN used is 1.
- **repetitions** <1..9999> - Number of test packets to send; the default value is 1.
- **timeout** <1..256> - Seconds within which a response is required before the test is considered as failed; the default value is 5.

ping <ip-addr> [repetitions <1..999>] [timeout <1..256>]

Issues an IP Ping requests to an IP device on the network and the system displays the following output at the CLI if a response is received from the specified IP address:

```
192.32.36.75 is alive, time = 10 ms
```

If no response is received the system displays the following:

```
Target did not respond
```

Parameters:

- <ip-addr> - Network IP address of station to send IP Ping to.
- **repetitions** <1..999>- Number of times to send IP Ping; the default value is 1.
- **timeout** <1..256> - Seconds within which a response is required before the test is considered as failed; the default value is 5.

2.3 System Configuration

2.3.1 System commands - EXEC level

show console

Displays the console parameters.

Output Format:

```
Switch Configuration - Console/Serial Link

Inbound Telnet Enabled [Yes] : Yes
Web Agent Enabled [Yes] : Yes
Terminal Type [VT100] : VT100
Screen Refresh Interval (sec) [3] : 3
Displayed Events [All] : All

Baud Rate [Speed Sense] : Speed Sense
Flow Control [XON/XOFF] : XON/XOFF
Connection Inactivity Time (min) [0] : 0
```

show mac-address [vlan <vlan-id>]

Displays the MAC addresses that the switch has learned from the network devices attached to the switch, and the port on which each address was learned. If no vlan is specified, then all MAC addresses that are know to the switch are shown.

Output Format:

```
Status and Counters - Address Table

MAC Address      Located on Port
-----
00105a-8abed4   1
00105a-cac0e8   1
0060b0-881c00   1
009004-8e3178   1
00c0f0-1c65ee   1
00c0f0-30d74a   1
080009-3515f9   1
080009-782368   1
080009-7b8cc4   1
080009-919b30   1
080009-959e2c   1
```

show mac-address <port-list>

Displays the MAC addresses that the switch has learned from the network devices attached to the specified switch port.

Output Format:

```
Status and Counters - Port Address Table - Port 1

  MAC Address
  -----
  00105a-8abed4
  00105a-cac0e8
  009004-8e3178
  00c0f0-1c65ee
  00c0f0-1c66ea
  00c0f0-30d74a
  080009-3515f9
  080009-782368
  080009-7b8cc4
  080009-919b30
  080009-959e2c
```

show management

Displays configured addresses that are used to manage the switch.

Output Format:

```
Status and Counters - Management Address Information

Time Server Address :

MAC Address          : 0060b0-885a80
IP Address           : 192.32.36.96
IPX Network Number  :
```


show modules

Displays the modules that are present on the switch.

Output Format:

Status and Counters - Module Information		
Slot	Module Type	Module Description
A		Slot Available

show system-information

Displays the status of and current configuration of all the switch internal resources.

Output Format:

System Information			
..System Name	:		
System Contact	:		
System Location	:		
Address Age Interval (min) [5] : 5			
Time Zone [0] : 0			
Daylight Time Rule [None] : User defined			
Beginning month [April]	:	April	Beginning day [1] : 1
Ending month [October]	:	October	Ending day [1] : 1
Firmware revision	:	C.08.XX	Base MAC Addr : 0060b0-885a80
ROM Version	:	C.05.X1	Serial Number : +
Up Time	:	17 hours	Memory - Total : 7,669,088
CPU Util (%)	:	2	Free : 4,871,840
IP Mgmt - Pkts Rx	:	14,496	Packet - Total : 462
Pkts Tx	:	9463	Buffers Free : 296
			Lowest : 237
			Missed : 0

2.3.2 System Configuration commands

mac-age-time <1..100000>

Sets the number of seconds a MAC address stays in the switch address table before being aged out. Aging out occurs if traffic isn't received from that MAC station within the age interval. The default value is 300.

console [**terminal** <vt100 | ansi>] [**screen-refresh** <value>] [**events** <none | all | non-info | critical | debug>] [**baud-rate** <value>] [**flow-control** <xon/xoff | none>] [**inactivity** <value>]

Sets the console parameters.

Parameters:

- **terminal** <vt100 | ansi> - Type of terminal being used (default is vt100).
- **screen-refresh** <1|3|5|10|20|30|45|60> - Sets the number of seconds before a refresh is done on the “Status and Counters” screens (default is 3).
- **events** <none | all | non-info | critical | debug>] – The level of Switch events displayed in Events Log. all - display all; none - display no events; not-info - display all events except informational-only; critical - display only critical-level events; debug (reserved for Internal use only).
- **baud-rate** <speed-sense | 1200 | 2400 | 4800 | 9600 | 19200 | 38400 | 57600 | 115200>] - Sets the data transmission speed for switch connect sessions initiated through the Console port. Default is speed-sense.
- **flow-control** <xon/xoff | none> - Flow Control Method; default is xon-xoff.
- **inactivity-timer** <0 | 1 | 5 | 10 | 15 | 20 | 30 | 60 | 120> - Sets the number of minutes of inactivity allowed by the switch before the switch will terminate the communication session. 0 means never terminate the session; default is 0 .

[no] auto-tftp <ip-addr filename>

Enables/disables automatic OS image download via TFTP.

time [*mm/dd/yy*] [*hh:mm:ss*] [**timezone** <value>] [**daylight-time-rule** <value>] [**begin-date** <mm/dd> **end-date** <mm/dd>]

This command display switch's date & time or optionally sets it.

Parameters:

- **timezone** <-1440..1440> - Sets the number of minutes your location is to the West(+) or East(-) of GMT (default is 0).
- **daylight-time-rule** <alaska | none | continental-us-canada | middle-europe-and-portugal | southern-hemisphere | western-europe | user-defined> - Sets the daylight savings time rule for your location. None (default) means that no time adjustment will be made.
- **begin-date** <mm/dd> **end-date** <mm/dd > - begin-date and end-date are only valid if the **daylight time rule** is set to **user-defined**.

snmp-server [**contact** <sys-contact>] [**location** sys-location>]

Sets the switch contact and location for administrative purposes.

Parameters:

- **contact** <sys-contact> - Up to 48 characters. Name of the switch administrator.
- **location** <sys-location> - Up to 48 characters. Description of the switch location.

hostname <name-string>

Sets the switch name for administrative purposes.

[no] telnet-server

Enables remote telnet access to the switch.

[no] web-management

Enables the web browser to interact with the web agent on the switch.

[no] password <operator | manager>

Sets passwords for different classes of users. This command causes the switch to prompt for a password twice, once for the new password and once to verify it was typed correctly, and disables echoing while you type the password.

Parameters:

- **<operator | manager>** - Class of user.

2.4 AUTHENTICATION

2.4.1 AUTHENTICATION commands - Configuration level

aaa authentication console <enable | login>

<primary-method> [<backup-method>]

Configures authentication mechanism used to control access to the switch.

aaa authentication telnet <enable | login>

<primary-method> [<backup-method>]

Configures authentication mechanism used to control access to the switch.

2.5 TACACS

2.5.1 TACACS commands - EXEC level

show tacacs

Displays TACACS configuration.

2.5.2 TACACS commands - Configuration level

[no] tacacs-server host <ip-addr> [key <key-string>]

Configures a TACACS server.

tacacs-server timeout <1-255>

Sets up the TACACS timeout interval in seconds.

2.6 CDP

2.6.1 CDP commands - EXEC level

show cdp [neighbor [port-num] [detail]]

Displays CDP configuration and neighbors discovered.

2.6.2 CDP commands - Configuration level

[no] cdp

Enables/disables CDP on the switch.

cdp timer <5-254>

Sets the CDP transmit interval in seconds.

cdp holdtime <10-255>

Sets the CDP holdtime in seconds.

cdp enable [ethernet] <port-list>

Enables/disables CDP on a particular port.

2.7 IP Stacking

2.7.1 IP Stacking commands - EXEC level

show stack [**candidates** | **all**]

Displays status information for the stacking feature. 'show stack' with no arguments displays the status of this switch's stack. If the keyword **candidates** is supplied then this command displays a list of candidates on the local network segment. If the keyword **all** is supplied then this command displays all the member switches of all stacks on the local network segment and all candidate switches.

2.7.2 IP Stacking commands - Configuration level

[no] stack

Enables/disables the stacking feature. If the stacking features is disabled, then the switch will reject a join request originating from a command switch.

[no] stack commander <*commander-name*>

Creates a command switch, and the no form of the command disperses the member switches from this command switch's stack, making them available to join another stack.

[no] stack member <*switch-num*> **mac-address** <*mac-addr*> [**password** <*password-str*>]

Configures the candidate switch identified by the MAC address to be a member for this switch's stack. The no form of the command removes the switch identified by *switch-num* from the stack

Parameters:

- <*switch-num*> - A number between 1 and 15 to uniquely identify each switch; a *switch-num* of zero always belongs to the command switch.
- **password** <*password-str*> - is the manager password configured on the candidate switch. If the candidate switch does not have a manager password then none should be supplied.

[no] stack join <*mac-addr*>

Causes a candidate switch to join the stack whose command switch is identified by *mac-addr*. The no form of the command causes the member switch to leave its current stack.

[no] stack auto-join

Causes the switch to advertise, via the discovery protocol, that it wants to automatically join any stack operating on the local LAN segment. Switches with passwords will not auto-join.

[no] stack auto-grab

Enables/disables auto-grab mode for stacking on the command switch. If enabled, the command switch will attempt to grab new candidate switches and make them members of the stack.

stack transmission-interval <n>

Sets the transmission interval for stacking.

2.8 Port Settings

2.8.1 Port commands - EXEC level

show interfaces config

Displays the basic configuration of the switch ports.

Output Format:

Switch Configuration - Port Settings					
Port	Type	Enabled	Mode	Flow Ctrl	Bcast Limit
----	-----	+	-----	-----	-----
1	10/100TX	Yes	Auto	Disable	0
2	10/100TX	Yes	Auto	Disable	0
3	10/100TX	Yes	Auto	Disable	0
4	10/100TX	Yes	Auto	Disable	0
5	10/100TX	Yes	Auto	Disable	0
6	10/100TX	Yes	Auto	Disable	0
7	10/100TX	Yes	Auto	Disable	0
8	10/100TX	Yes	Auto	Disable	0
9	10/100TX	Yes	Auto	Disable	0
10	10/100TX	Yes	Auto	Disable	0
11	10/100TX	Yes	Auto	Disable	0

show statistics

Displays a summary of the network traffic handled by the switch.

Output Format:

Status and Counters - Port Counters				
Port	Total Bytes	Total Frames	Errors Rx	Drops Tx
----	-----	-----	-----	-----
1	83,612,741	446,524	3	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	15,080	10	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0

show statistics <port-number>

Displays the network traffic statistics for the specified port.

Output Format:

Status and Counters - Port Counters - Port 1			
Link Status	: Up		
Bytes Rx	: 83,290,873	Bytes Tx	: 1,234,430
Unicast Rx	: 395,490	Unicast Tx	: 14,995
Bcast/Mcast Rx	: 40,161	Bcast/Mcast Tx	: 180
FCS Rx	: 3	Drops Tx	: 0
Alignment Rx	: 1	Collisions Tx	: 25
Runts Rx	: 0	Late Colln Tx	: 0
Giants Rx	: 0	Excessive Colln	: 0
Total Rx Errors	: 4	Deferred Tx	: 17

show interfaces

Displays the status and current configuration of all the switch ports.

Output Format:

Status and Counters - Port Status							
Port	Type	Intrusion		Status	Mode	Flow Ctrl	Bcast Limit
		Alert	Enabled				
1	10/100TX	No	Yes	Up			0
2	10/100TX	No	Yes	Down			0
3	10/100TX	No	Yes	Down			0
4	10/100TX	No	Yes	Down			0
5	10/100TX	No	Yes	Down			0
6	10/100TX	No	Yes	Down			0
7	10/100TX	No	Yes	Down			0
8	10/100TX	No	Yes	Down			0
9	10/100TX	No	Yes	Down			0
10	10/100TX	No	Yes	Down			0

2.8.2 Ethernet Interface Configuration Commands

To enter the Ethernet Interface Configuration level, use the Interface command described above. Note that a *port-list* may be used to configure these options on more than one port and that any of the following commands can be appended to the Interface command to simply change the configuration. For example:

```
HP 4108GL(config)# interface ethernet A1,A3 disable
```

broadcast-limit <0..99>

Sets the theoretical maximum of network bandwidth in percentage that can be used for broadcast traffic. Any broadcast traffic exceeding that limit will be dropped. 0 means the feature is disabled.

disable

Disables the port.

enable

Enables the port.

[no] flow-control

Enables or disables flow control on the port.

Note: Full-duplex ports only.

speed-duplex <10-full | 10-half | 100-full | 100-half | 1000-full | 10-auto | auto>

Sets the mode of operation for the port.

[no] lacp [active | passive]

enables or disables LACP on the port.

2.9 Trunk Configuration

2.9.1 Trunk commands - EXEC level

show trunks [<port-list>]

Displays trunks that are configured on the system. This does not include dynamic trunks that have been formed by LACP.

Output Format:

Switch Configuration - Trunks								
Port	Type	Group	Type		Port	Type	Group	Type
----	-----	+	-----		----	-----	+	-----
1	10/100TX				9	10/100TX		
2	10/100TX		Trk1		10	10/100TX		FEC
3	10/100TX		Trk1		11	10/100TX		FEC
4	10/100TX				12	10/100TX		
5	10/100TX		Trk2		13	10/100TX		Trunk
6	10/100TX		Trk2		14	10/100TX		Trunk
7	10/100TX				15	10/100TX		
8	10/100TX				16	10/100TX		

show lacp

Displays LACP status information.

Output Format:

LACP					
PORT NUMB	LACP ENABLED	TRUNK GROUP	PORT STATUS	LACP PARTNER	LACP STATUS
1	Active	Dyn1	Up	Yes	Success
2	Passive	Trk1	Down	No	Failure
3	Active		Blocked	No	Failure
4	Active		Disabled		
5	Active	Dyn1	Up	Yes	Success
6	Active		Standby		
7	Active		Up		
8	Active		Up		

2.9.2 Trunk commands - Configuration level

[no] trunk <trk1..trk24 > [trunk | fec | lacp] <port list>

This command configures each port in the switch to either be a Trunked, SA Only Trunked, FEC Trunked port, or a regular singular port.

For Trunks: All ports in a Trunked group, 1 to 4 ports maximum, must have the same port type.

General Considerations: (1) To avoid broadcast storms, or loops in your network while configuring trunks, first disable or disconnect all the ports you wish to add or remove from both sides of the trunk. Once done configuring the trunk, enable or reconnect the ports. (2) If you have multiple groups of the same or different types and/or singular connections between two switches, you have created a loop in the network. You must enable Spanning Tree on both switches to avoid a broadcast storm or other network problems. See the Switch Management and Configuration Guide for more information.

Parameters:

- **<trk1..trk24 | none>** - Determines the group that a port is configured to be a member of: **trkX** indicates a general group of trunked ports; **none** indicates that the associated port is a singular independent port (i.e., not part of a trunk).

- **[type <trunk | fec | lacp>]** - Determines the method by which the switch distributes the traffic load across the multiple links in the trunk group: **trunk** - uses source and destination MAC addresses for load distribution (select this to connect to devices such as the HP Switch 2000 or the Sun Trunk Server); **fec** - uses an automatic protocol for load distribution (select this to connect to devices that support Cisco's Fast EtherChannel trunking).

2.10 Spanning Tree

2.10.1 Spanning Tree commands - EXEC level

show spanning-tree config

Displays spanning tree configuration information.

Output Format:

Switch Configuration - Spanning Tree Operation											
Spanning Tree Enabled [No] : No					Hello Time [2] : 2						
STP Priority [32768] : 32768					Forward Delay [15] : 15						
Max Age [20] : 20											
Port	Type	Cost	Pri	Mode		Port	Type	Cost	Pri	Mode	
----	-----	+	----	---	----	----	-----	+	----	---	----
1	10/100TX	10	128	Norm		9	10/100TX	10	128	Norm	
2	10/100TX	10	128	Norm		10	10/100TX	10	128	Norm	
3	10/100TX	10	128	Norm		11	10/100TX	10	128	Norm	
4	10/100TX	10	128	Norm		12	10/100TX	10	128	Norm	
5	10/100TX	10	128	Norm		13	10/100TX	10	128	Norm	
6	10/100TX	10	128	Norm		14	10/100TX	10	128	Norm	
7	10/100TX	10	128	Norm		15	10/100TX	10	128	Norm	

show spanning-tree

Displays bridge-level spanning tree information.

Output Format:

```

                                Status and Counters - Spanning Tree Information

STP Enabled           : Yes
Switch Priority       : 32,768
Hello Time           : 2
Max Age              : 20
Forward Delay        : 15

Topology Change Count : 1
Time Since Last Change : 4 mins

Root MAC Address     : 0060b0-885a80
Root Path Cost       : 0
Root Port            : This switch is root
Root Priority         : 32768

Port    Type      Cost    Priority  State      Designated Bridge
-----
  1     10/100TX   10      128     Forwarding 0060b0-885a80
  2     10/100TX   10      128     Disabled
  3     10/100TX   10      128     Disabled
  4     10/100TX   10      128     Disabled
  5     10/100TX   10      128     Disabled
  6     10/100TX   10      128     Disabled
  7     10/100TX   10      128     Disabled
  8     10/100TX   10      128     Disabled
  9     10/100TX   10      128     Disabled
 10     10/100TX   10      128     Disabled
 11     10/100TX   10      128     Disabled

```

2.10.2 Spanning Tree commands - Configuration level

[no] spanning-tree

Enables or disables spanning tree on the device.

```

spanning-tree [forward-delay <seconds>]
               [hello-time <seconds>]
               [maximum-age <seconds>]
               [priority <0..65535>]

spanning-tree <[ethernet] port-list> [path-cost <1..65535>]
                                       [priority <0..255>]
                                       [mode <norm|fast>]

```

This command configures the parameters for operation of the switch in a spanning tree topology. Note - the default spanning tree configuration complies with the IEEE 802.1D standard recommended values and should not be changed without thorough knowledge of spanning tree operation. Note: As per IEEE 802.1Q Standard, this switch implements a single instance of Spanning Tree operating over all VLANs.

Parameters:

- **path-cost** <port-list><1..65535> - Individual port cost used to determine which ports are forwarding ports. The defaults is 100 for 10 Mbps ports, 10 for 10/100TX and 100FX ports, and 5 for 100/1000TX and 1Gbps ports.
- **priority** <port-list><0..255> - Another value used by spanning tree to the forwarding ports. The port with the lowest number has the highest priority. The default is 128.
- **mode** <port-list> [**norm** | **fast**] (default: norm) - **norm** (for normal) mode causes the port to operate according to the standard Spanning Tree Protocol - when connected, the port progresses through the Listening, Learning, and either Blocking or Forwarding states. **fast** mode causes the port to immediately operate in the Forwarding State when a device is connected to it. Use this setting only on ports that are connected to end nodes (for example: PCs, Workstation, or printers). Caution: Changing the Mode to **fast** on ports connected to a hub or switch may cause loops in your network that STP may not be able to detect, in all cases.
- **forward-delay** <seconds> - Time the switch waits between transition from listening to learning and from learning to forwarding states. The range is 4 to 30. The default is 15.
- **hello-time** <seconds> - Time (in seconds) between messages transmitted when the switch is root. The range is 1 to 10. The default is 2.
- **maximum-age** <seconds> - Maximum message age (in seconds) of received STP information before it is discarded. The range is 6 to 40. The default is 20.
- **priority** <0..65535> - Switch (or bridge) priority used along with the switch MAC address to determine which device is the root. The default is 32768.

2.11 IP

2.11.1 IP commands - EXEC level

show ip

Displays the IP configuration on the switch.

Output Format

There are two different IP configuration screens. The first is displayed when no vlans are configured on the switch; the second is displayed when vlans are configured.

```
Switch Configuration - Internet (IP) Service

Default Gateway: 192.32.36.1
TimeP Config [DHCP]: DHCP      TimeP Poll Interval (min) [720]: 720

IP Config [DHCP/Bootp] : DHCP/Bootp
IP Address : 192.32.36.96      Subnet Mask : 255.255.255.192
```

```
Switch Configuration - Internet (IP) Service

Default Gateway: 192.32.36.1
TimeP Config [DHCP]: DHCP      TimeP Poll Interval (min) [720]: 720

VLAN          IP Config      IP Address      Subnet Mask
----- + -----
DEFAULT_VLAN | Manual        192.32.36.91   255.255.255.192
vlan2        | DHCP/Bootp
```


show ip authorized-managers

Displays the current configuration's IP managers access records.

Output Format:

Switch Configuration - IP Managers		
Authorized Manager IP	IP Mask	Access Level
192.32.36.78	255.255.255.255	Manager

show arp

Displays the ARP cache of the switch.

Output Format

ARP Cache		
IP Address	MAC Address	VLAN
192.32.36.78	080009-012345	orange-lan

show ip route

Displays active IP route entries used by the switch.

Output Format

IP Route Entries					
Network Addr	Network Mask	Gateway	Port	Cost	Type
192.32.36.0	255.255.255.0	192.32.36.1	A1	1	R

show timp

Displays active Timep configuration.

Output Format

```
Timep Configuration

Time Sync Mode: Timep
TimeP Mode [Disabled] : Manual      Server Address : 15.29.16.105
Poll Interval (min) [720] : 600
```

show sntp

Displays active SNTP configuration.

Output Format

```
SNTP Configuration

Time Sync Mode: Timep
SNTP Mode [Disabled] : Disabled
Poll Interval (min) [720] : 600
```

2.11.2 IP commands - Configuration level

[no] ip authorized-managers <ip-addr>
[mask <ip-mask>]
[operator | manager]

Sets the IP addresses you will allow to access the switch's Web browser interface, to telnet to the switch console, and to perform TFTP operations. A maximum of 10 addresses is supported.

Parameters:

- <ip-addr> - The IP address of an authorized manager.
- **mask** <ip-mask> - The default mask is 255.255.255.255. A mask that allows you to define which portions of the listed IP address need to be matched by an incoming request. For example, with an authorized address of 10.8.11.1 and a mask of 255.255.255.255, only access from 10.8.11.1 is allowed. With a mask of 255.255.255.0, access from any IP address with 10.8.11.x is allowed.
- <operator | manager> - The default access level is **manager**. A designation of the management capabilities that are accessible to the authorized manager. **manager** allows full access to all web browser and the CLI for viewing and setting the switch configuration, and for performing all other interface operations, including all TFTP operations. **operator** allows view-only access from the web browser and the CLI, but does not allow changing the switch configuration or any TFTP operations.

[no] timesync <timep | sntp >

Configures the network time protocol to be used by the switch.

[no] timep <dhcp | manual <ip-addr>> [interval <1..9999>]

Configures Timep on the switch.

Parameters:

- <dhcp | manual> - The method the switch uses to acquire the Timep server address: **dhcp** - from a DHCP server; **manual** - you manually enter the Timep server address; **disable** - the switch will not attempt to get its time from a Timep server.
- **interval** <1..9999> (default is 720) How often (in minutes) the switch tries to get the current time.
- <ip-addr> - The IP address of the Timep server that the switch gets the current time from.

[no] snmp < server <*ip-addr*> [version]> [poll-interval <30-720>]

Configures SNMP on the switch.

ip default-gateway <*ip-addr*>

Assigns an IP address to be used as the default gateway when the switch is not in routing mode.

ip route <<*ip-addr*>/<1..32> | <*ip-addr*> <*ip-mask*>> <*ip-addr*>

Used to configure a static IP route for the switch.

ip ttl <*value*>

Sets the maximum time that a packet will live on the network.

[no] arp <*ip-addr*> [*mac-addr*]

Used to modify the arp cache.

2.11.3 IP commands - VLAN Interface level

```
[no] ip address <dhcp-bootp | <<ip-addr>/<1..32> |  
                <ip-addr> <ip-mask>] [secondary]>
```

This command configures the IP address for the switch. Note, by default this command uses a VLAN identifier of one. Although this command is duplicated at the VLAN context level, it is defined here for those customers who do not want to be exposed to VLAN distinctions.

Parameters:

- **dhcp-bootp** - The method the switch uses to acquire its IP Service configuration: dhcp-bootp - the switch attempts to get its IP configuration, or its complete configuration, from a DHCP/Bootp server, depending on how the server is configured. If the 'address' is specified at the command line then the interface uses a 'manual' method in which the IP address and subnet mask are explicitly specified. If the modal operation 'no' is specified for the interface then the interface becomes disabled and all IP communication with the switch ceases. This includes SNMP, management, Web browser access, and telnet access.
- <ip-addr>/<1..32> - IP address for the switch (or VLAN) IP interface. <1..32> is the number of bits present in the subnet mask used by all devices in the IP subnet being configured.
- <ip-addr> <ip-mask> - This is an alternative syntax for specifying the IP address and subnet mask described above.

2.12 SNMP

2.12.1 SNMP commands - EXEC level

show snmp-server

Displays the SNMP communities which may be used to access the switch along with the network management stations configured to receive SNMP traps.

Output Format:

SNMP Server		
Community Name	MIB View	Write Access
public	Manager	Unrestricted
Send Authentication Traps [No] : No		
Address	Community	Events Sent in Trap
192.32.36.78	public	None

2.12.2 SNMP commands – Configuration Level

[no] snmp-server community *<community-name>*
[manager | operator]
[restricted | unrestricted]

Used to configure a new SNMP community or to edit the configuration for an existing one

Parameters:

- *<community-name>* - Enter (up to 16 characters) the SNMP community name.
- [manager | operator] - Manager - the community can access all MIB objects; Operator - the community can access all except the CONFIG MIB.
- [restricted | unrestricted] - Unrestricted - any MIB variable that has read/write access can be set; Restricted - MIB variables cannot be set, only read.

[no] snmp-server host *<ip-addr>* *<community-name>* [none | all | non-info | critical | debug]

Configures which network management stations will receive SNMP event log messages from the switch and the types of events for which the switch will send these messages.

Parameters:

- *<ip-addr>* - Address of the network management station.
- *<community-name>* - The name of the SNMP community to which the network management station belongs.
- [none | all | non-info | critical | debug] - The level of Switch events that will generate a Trap to be sent: None - send no log message; All - send all log messages; Not INFO - send each log message that is not informational-only; Critical - send critical-level log messages; Debug (reserved for Internal use).

[no] snmp-server enable traps authentication

Enables authentication traps to be sent when a management station attempts an unauthorized access.

2.13 VLAN Configuration

2.13.1 VLAN commands - EXEC level

show vlans

Displays the current VLANs.

Output Format:

```
Switch Configuration - VLAN Information

VLAN Support [No] : Yes
Maximum VLANs to support [8] : 8
Primary VLAN: DEFAULT_VALN

802.1Q VLAN ID  Name          Type    Status
-----
1                DEFAULT_VLAN Static   Up
```

show vlans <vlan-id>

Displays which ports are assigned to particular VLANs.

Output Format:

```
Switch Configuration - VLAN - VLAN Port Assignment

Port  DEFAULT_VLAN  vlan2  |  Port  DEFAULT_VLAN  vlan2
---- + -
1    | Untagged     No     |  9    | Untagged     No
2    | Untagged     No     |  10   | Untagged     No
3    | Untagged     No     |  11   | Untagged     No
4    | Untagged     No     |  12   | Untagged     No
5    | Untagged     No     |  13   | Untagged     No
6    | Untagged     No     |  14   | Untagged     No
7    | Untagged     No     |  15   | Untagged     No
8    | Untagged     No     |  16   | Untagged     No
```

2.13.2 VLAN commands – Configuration Level

max-vlans <1..256>

Sets the maximum number of VLANs on the system. The default value is 8.

primary-vlan <*vlan-id*>

Sets the primary VLAN used for network management.

[no] vlan <*vlan-id*>

Creates a new VLAN or changes the system context to the VLAN configuration level. Note that *vlan-name* can be substituted for the *vlan-id* when using this command.

static-vlan <*vlan-id*>

Creates a new static VLAN from one which has been dynamically created by GVRP.

[no] vlan-support

Enables VLAN support on the switch.

2.13.3 VLAN Interface commands

To enter the VLAN Interface Configuration level, use the `vlan` command described above. Note that any of the following commands can be appended to the `vlan` command to simply change the configuration. For example:

```
HP 4108GL(config)# add vlan 2 name orange-lan
```

name <*vlan-name*>

Changes the current VLAN identifier's name.

[no] tagged <*port-list*>

Assigns ports to current VLAN identifier as tagged.

[no] untagged <*port-list*>

Assigns ports to current VLAN identifier as untagged.

[no] forbid <*port-list*>

Forbids the ports from ever becoming a member of the current VLAN.

auto <port-list>

Causes each port identified in the port-list to learn their VLAN membership using the Group VLAN Registration Protocol (GVRP). This command is only valid when GVRP is enabled.

2.14 GVRP

2.14.1 GVRP commands - EXEC level

show gvrp

Displays the current VLANs.

Output Format:

```
Switch Configuration - GVRP Information

GVRP Enabled [No] : Yes

Port  Type      | Unknown VLAN
----  -
A1    10/100TX  | Learn
A2    10/100TX  | Learn
A3    10/100TX  | Learn
A4    10/100TX  | Learn
```

2.14.2 GVRP commands – Configuration level

[no] gvrp

Enables the Group VLAN Registration Protocol (GVRP) on the switch.

2.14.3 Ethernet Interface Configuration commands

unknown-vlans <learn | block | disable>

Defines what the port will do when it encounters GVRP packet requested it to join a VLAN. If learn is specified then the port will join the advertised VLAN and propagate a VLAN join requests through all other forwarding ports that are participating in GVRP. If block is specified then the port will not join the advertised VLAN and will not propagate any VLAN joins for the advertised VLAN.

2.15 IGMP

2.15.1 IGMP Commands – EXEC Level

show ip igmp [*vlan-id*] config

Displays IGMP configuration information.

Output Format:

```
Switch Configuration - IGMP Service

IGMP Enabled [No] : No
Forward with High Priority [No] : No

Port      Type      IP Mcast  |  Port      Type      IP Mcast
-----  -
3         10/100TX | Auto      |  11        10/100TX | Auto
4         10/100TX | Auto      |  12        10/100TX | Auto
5         10/100TX | Auto      |  13        10/100TX | Auto
6         10/100TX | Auto      |  14        10/100TX | Auto
7         10/100TX | Auto      |  15        10/100TX | Auto
8         10/100TX | Auto      |  16        10/100TX | Auto
9         10/100TX | Auto      |  Mesh     Mesh      | Auto
10        10/100TX | Auto      |           |
```

show ip igmp [<*vlan-id*> | group <*group-address*>]

When IGMP is enabled, this command shows a summary of the IGMP status for all the IP Multicast groups used by the selected VLAN. If the feature is not enabled, then this command displays “IGMP not enabled”.

Output Format:

```
Status and Counters - IP Multicast (IGMP) Status

Active Group Addresses  Reports  Queries  Querier Access Port
-----

Active Group Address :

Port      Type      Access      Age timer  Leave timer
-----

Active Group Address :

Port      Type      Access      Age timer  Leave timer
-----
```

2.15.2 IGMP Configuration commands – Vlan Interface level

[no] ip igmp

Enables the IP Multicast (IGMP) feature for IGMP communication between Multicast Routers, Multicast Servers, and Multicast Clients connected to the switch or selected VLAN.

[no] ip igmp high-priority-forward

Determines whether the switch forwards all IP Multicast traffic at high priority.

[no] ip igmp querier

Determines whether the switch is querier or not.

ip igmp <auto | block | forward> <port-list>

Instructs the switch's IGMP feature to control the action taken with an IGMP frame.

2.16 Port Monitoring

2.16.1 Port Monitoring commands - EXEC level

show mirror-port

Displays the configuration of the monitoring port.

Output Format:

```
Switch Configuration - Network Monitoring Port

Monitoring Enabled [No] : Yes
Monitoring Port : 3
Monitor : Ports
```

Port	Type	Action	Port	Type	Action
3	10/100TX		11	10/100TX	
4	10/100TX		12	10/100TX	
5	10/100TX		13	10/100TX	
6	10/100TX		14	10/100TX	
7	10/100TX		15	10/100TX	
8	10/100TX		16	10/100TX	
9	10/100TX		Mesh	Mesh	

2.16.2 Port Monitoring commands - Configuration level

[no] mirror-port [<port-num>]

This command defines the switch port that will be used as the Monitoring Port for diagnostic purposes. The switch ports that will be monitored are defined through the **monitor** command at the Ethernet Interface Configuration Level. All the network traffic seen by the monitored ports is copied to the Monitoring Port to which a network analyzer can be attached.

Note: When monitoring multiple ports in a busy network, some frames may not be copied to the monitoring port.

Parameters:

- *port-num* - Port that will be acting as the monitoring port. A configured trunk port cannot be used.

2.16.3 Port Monitoring commands - VLAN Interface level

[no] monitor

Used to enable/disable monitoring of the VLAN.

2.16.4 Port Monitoring commands - Ethernet Interface level

[no] monitor

Used to enable/disable monitoring of the port.

2.17 Port Security

2.17.1 Port Security commands - EXEC level

show port-security

Displays the per-port security configuration for the switch.

Output Format:

Switch Configuration - Port Security		
Port	Learn Mode	Action
-----	-----	-----
3	Continuous	None
4	Continuous	None
5	Continuous	None
6	Continuous	None
7	Continuous	None
8	Continuous	None
9	Continuous	None
10	Continuous	None
11	Continuous	None
12	Continuous	None
13	Continuous	None

show port-security [ethernet] <port-list>

Displays the port security configuration for an individual port.

Output Format:

```
Switch Configuration - Port Security

Port : 3
Learn Mode [Continuous] : Continuous
Action [None] : None
```

show port-security intrusion-log

Displays information on any port security intrusions that have occurred on the switch.

Output Format:

```
Status and Counters - Intrusion Log

Port   MAC Address           Date / Time
-----
-----
```

2.17.2 Port Security commands - Configuration level

port-security <port-list>

[learn-mode < continuous | static >]

[address-limit <1..8>]

[action <none | send-alarm | send-disable>]

[no] port-security <port-list>

[mac-address <mac-addr>]

This command configures port security on the switch.

Parameters:

- **learn-mode** - If **continuous** is selected, the switch learns any new address from packets received on the port. If **static** is selected, up to the number of addresses

defined by the "address-limit" parameter are learned or entered for the port. These addresses are static; they are not aged out.

- **addr-limit** <1..8> - This parameter is valid only if **static** is selected for the **learn-mode**. This parameter defines the number of network devices that are authorized to communicate through the switch port. Up to 8 devices can be authorized for any port.
- **addr-list** <*mac-addr*> - This parameter is valid only if **static** is selected for the **learn-mode**. If you enter no authorized addresses, the switch will learn and configure authorized addresses as it detects them on the port, up to the address-limit number of addresses, and make these the static authorized addresses for the port. If you enter fewer addresses than the Address Limit, the switch will learn the additional addresses up to the address-limit. If you enter more addresses than the address-limit, an error message is displayed when you attempt to Save the configuration.
- **action** - Indicates the action the switch will take if an intruder is detected on the port.

3. Console Menu

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                                Main Menu

1. Status and Counters...
2. Switch Configuration...
3. Console Passwords...
4. Event Log
5. Command Line (CLI)
6. Reboot Switch
7. Download OS
8. Run Setup
0. Logout

Provides the menu to display configuration, status, and counters.
To select menu item, press item number, or highlight item and press <Enter>.
```

3.1 Status and Counters

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                                Status and Counters Menu

1. General System Information
2. Switch Management Address Information
3. Module Information
4. Port Status
5. Port Counters
6. Address Table
7. Port Address Table
8. Spanning Tree Information
0. Return to Main Menu...

Displays switch management information including software versions.
To select menu item, press item number, or highlight item and press <Enter>.
```

3.1.1 General System Information

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - General System Information

System Contact      :
System Location     :

Firmware revision  : E.08.XX          Base MAC Addr      : 0060b0-882200
ROM Version        : E.05.X1          Serial Number      :

Up Time            : 40 mins           Memory - Total     : 5,803,088
CPU Util (%)       : 1                 Free               : 2,230,032

IP Mgmt - Pkts Rx  : 11                Packet - Total     : 438
          Pkts Tx  : 0                 Buffers - Free     : 272
                                          Lowest              : 199
                                          Missed              : 0

Actions->   Back      Help

Return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.1.2 Management Address Information

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - Management Address Information

Time Server Address :

MAC Address          : 0060b0-882200
IP Address           : 10.0.8.105
IPX Network Number  :

Actions->   Back      Help

Return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.1.3 Module Information

```

HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                        Status and Counters - Module Information

Slot      Module Type      Module Description
-----
A          Slot Available
B          Slot Available
C          Slot Available
D          Slot Available
E          Slot Available
F          Slot Available
G          Slot Available
H          Slot Available

Actions->   Back      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.

```

3.1.4 Port Status

```

HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                        Status and Counters - Port Status

Port      Type      Intrusion
Alert     Enabled  Status   Mode      Flow      Bcast
-----
1         10/100TX No       Yes      Up        10HDx     off       0
2         10/100TX No       Yes      Down      10HDx     off       0
3         10/100TX No       Yes      Down      10HDx     off       0
4         10/100TX No       Yes      Down      10HDx     off       0
5         10/100TX No       Yes      Down      10HDx     off       0
6         10/100TX No       Yes      Down      10HDx     off       0
7         10/100TX No       Yes      Down      10HDx     off       0
8         10/100TX No       Yes      Down      10HDx     off       0
9         10/100TX No       Yes      Down      10HDx     off       0
10        10/100TX No       Yes      Down      10HDx     off       0

Actions->   Back      Intrusion log      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.

```

3.1.5 Port Counters

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                        Status and Counters - Port Counters

Port   Total Bytes   Total Frames   Errors Rx   Drops Tx
-----
 1      16,448          217           0           0
 2           0           0           0           0
 3           0           0           0           0
 4           0           0           0           0
 5           0           0           0           0
 6           0           0           0           0
 7           0           0           0           0
 8           0           0           0           0
 9           0           0           0           0
10           0           0           0           0
11           0           0           0           0

Actions->  Back      Show details   Reset      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.1.5.1 Port Counters Details

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                        Status and Counters - Port Counters - Port 1

Link Status      : Up

Bytes Rx         : 16,088          Bytes Tx         : 360
Unicast Rx       : 88              Unicast Tx       : 4
Bcast/Mcast Rx   : 124            Bcast/Mcast Tx   : 1

FCS Rx           : 0                Drops Tx         : 0
Alignment Rx     : 0                Collisions Tx    : 0
Runts Rx         : 0                Late Colln Tx    : 0
Giants Rx        : 0                Excessive Colln  : 0
Total Rx Errors  : 0                Deferred Tx      : 0

Actions->  Back      Reset      Help

Return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.1.6 Address Table

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - Address Table - VLAN ID 23

  MAC Address      Located on Port
  -----
0060b0-e26440     1
080009-092851     1
080009-76ac55     1
080009-97aad2     1

Actions->   Back      Search      Next page      Prev page      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.1.7 Port Address Table

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - Port Address Table - Port A1

  MAC Address
  -----
0060b0-e26440
080009-092851
080009-76ac55
080009-97aad2

Actions->   Back      Search      Next page      Prev page      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.1.8 Spanning Tree Information

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - Spanning Tree Information

STP Enabled           : Yes
Switch Priority       : 32,768
Hello Time           : 2
Max Age              : 20
Forward Delay        : 15

Topology Change Count : 1
Time Since Last Change : 4 mins

Root MAC Address     : 0060b0-885a80
Root Path Cost       : 0
Root Port            : This switch is root
Root Priority         : 32768

Actions->   Back      Show ports      Help

Return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.1.8.1 Spanning Tree Port Information

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Status and Counters - Spanning Tree - Port Information

Port   Type      Cost   Priority   State      Designated Bridge
-----
1      10/100TX    10     128      Forwarding 0060b0-885a80
2      10/100TX    10     128      Disabled
3      10/100TX    10     128      Disabled
4      10/100TX    10     128      Disabled
5      10/100TX    10     128      Disabled
6      10/100TX    10     128      Disabled
7      10/100TX    10     128      Disabled
8      10/100TX    10     128      Disabled
9      10/100TX    10     128      Disabled

Actions->   Back      Help

Return to previous screen.
Use up/down arrow keys to scroll to other entries, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2 Configuration Menu

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
Switch Configuration Menu

1. System Information
2. Port/Trunk Settings
3. Network Monitoring Port
4. Spanning Tree Operation
5. IP Configuration
6. SNMP Community Names
7. Authorized Managers
8. VLAN Menu...
0. Return to Main Menu...

Configures system-level information including system identification.
To select menu item, press item number, or highlight item and press <Enter>.
```

3.2.1 System Information

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                          Switch Configuration - System Information

System Name : DEFAULT_CONFIG
System Contact :
System Location :

Inactivity Timeout (min) [0] : 0           Address Age Interval (min) [5] : 5
Inbound Telnet Enabled [Yes] : Yes         Web Agent Enabled [Yes] : Yes

Time Zone [0] : 0
Daylight Time Rule [None] : None

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.2.2 Port/Trunk Settings

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                          Switch Configuration - Port/Trunk Settings

Port      Type      Enabled  Mode      Flow Ctrl  Group      Type
-----  -
A1      10/100TX | Yes      Auto      Disable    Dyn        LACP
A2      10/100TX | Yes      Auto      Disable    Dyn        LACP
A3      10/100TX | Yes      Auto      Disable    Trk1       Trunk
A4      10/100TX | Yes      Auto      Disable    Trk1       Trunk
A5      10/100TX | Yes      Auto      Disable
A6      10/100TX | Yes      Auto      Disable    Trk2       FEC
A7      10/100TX | Yes      Auto      Disable    Trk2       FEC
A8      10/100TX | Yes      Auto      Disable    Dyn        LACP
A9      10/100TX | Yes      Auto      Disable    Trk2       FEC
A10     10/100TX | Yes      Auto      Disable    MESH
A11     10/100TX | Yes      Auto      Disable    MESH

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```


3.2.3 Network Monitoring Port

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - Network Monitoring Port

Monitoring Enabled [No] : Yes
Monitoring Port : A1
Monitor : Ports

Port      Type      Action      Port      Type      Action
-----+-----+-----+-----+-----+-----
A1    10/100TX |
A2    10/100TX |
A3    10/100TX |
A4    10/100TX |
A5    10/100TX |
A6    10/100TX |
A7    10/100TX |
A8    10/100TX |
B1    10/100TX |
B2    10/100TX |
B3    10/100TX |
B4    10/100TX |

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.2.4 Spanning Tree Operation

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - Spanning Tree Operation

Spanning Tree Enabled [No] : No
STP Priority [32768] : 32768           Hello Time [2] : 2
Max Age [20] : 20                     Forward Delay [15] : 15

Port      Type      Cost  Pri  Mode
-----+-----+-----+---+----
A1    10/100TX | 10    128  Norm
A2    10/100TX | 10    128  Norm
A3    10/100TX | 10    128  Norm
A4    10/100TX | 10    128  Norm
A5    10/100TX | 10    128  Norm
A6    10/100TX | 10    128  Norm
A7    10/100TX | 10    128  Norm
A8    10/100TX | 10    128  Norm

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.2.5 IP Configuration

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - Internet (IP) Service

Default Gateway : 10.0.8.1
Time Protocol Config [DHCP] : DHCP
TimeP Poll Interval (min) [720] : 720

IP Config [DHCP/Bootp] : Manual
IP Address : 10.0.8.105
Subnet Mask : 255.255.248.0

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

With multiple Vlans configured:

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - Internet (IP) Service

Default Gateway : 10.0.8.1
Time Protocol Config [DHCP] : DHCP
TimeP Poll Interval (min) [720] : 720

VLAN          IP Config   Ip Address   Subnet Mask
-----+-----
Orange Lan   | Manual     10.0.8.105  255.255.248.0
Yellow Lan   | Disabled

Actions->  Cancel      Edit      Save      Help

Cancel changes and return to previous screen.
Use arrow keys to change action selection and <Enter> to execute action.
```

3.2.6 SNMP Communities

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - SNMP Communities

Community Name  MIB View  Write Access
-----
public          Manager  Unrestricted

Actions->  Back    Add    Edit    Delete    Help

Return to previous screen.
Use up/down arrow keys to change record selection, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2.7 Authorized Managers

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                Switch Configuration - Authorized Managers

Authorized Manager  IP Mask      Access Level
-----
15.29.16.80        255.255.255.255  Manager

Actions->  Back    Add    Edit    Delete    Help

Return to previous screen.
Use up/down arrow keys to change record selection, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2.8 VLAN Menu

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                          Switch Configuration - VLAN Menu

1. VLAN Support
2. VLAN Names
3. VLAN Port Assignment
4. Return to Previous Menu...
0. Return to Main Menu...

Return to previous screen.
Use up/down arrow keys to change record selection, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2.8.1 VLAN Support

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                          Switch Configuration - VLAN Support

Activate VLANs [No] : Yes
Maximum Vlnas to support [8] : 8
Primary VLAN : DEFAULT_VLAN
GVRP Enabled [No] : No

Actions->  Back      Add      Edit      Delete      Help

Return to previous screen.
Use up/down arrow keys to change record selection, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2.8.2 VLAN Names

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
Switch Configuration - VLAN Names

  Name      802.1Q VLAN ID
-----
DEFAULT_VLAN 1

Actions->  Back   Add   Edit   Delete   Help

Return to previous screen.
Use up/down arrow keys to change record selection, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.2.8.3 VLAN Port Assignment

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
Switch Configuration - VLAN Port Assignment

Port  DEFAULT_VLAN | Port  DEFAULT_VLAN
----+----- | ----+-----
A1   | Tagged   | E1   | Untagged
A2   | Tagged   | E2   | Untagged
A3   | Tagged   | E3   | Untagged
A4   | Tagged   | E4   | Untagged
A5   | Tagged   | E5   | Untagged
A6   | Tagged   | E6   | Untagged
A7   | Tagged   | E7   | Untagged
A8   | Tagged   | E8   | Untagged
A9   | Tagged   | E9   | Untagged
A10  | Tagged   | E10  | Untagged
A11  | Tagged   | E11  | Untagged
A12  | Tagged   | E12  | Untagged

Actions->  Cancel   Edit   Save   Help

Use arrow keys to change field selection, <Space> to toggle field choices,
and <Enter> to go to Actions.
```

3.3 Password Menu

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                        Set Password Menu

1. Set Operator Password
2. Set Manager Password
3. Delete Password Protection
4. Return to Previous Menu...
0. Return to Main Menu...

Prompts you to enter an Operator-level password.
To select menu item, press item number, or highlight item and press <Enter>.
```

3.4 Event Log

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
M 01/01/90 00:00:07 sys: 'System reboot due to Power Failure'
I 01/01/90 00:00:07 system: -----
I 01/01/90 00:00:07 system: System went down without saving crash information
I 01/01/90 00:00:29 timep: timep client enabled
I 01/01/90 00:00:29 garp: GARP Protocol enabled
I 01/01/90 00:00:31 tftp: Enable succeeded
I 01/01/90 00:00:31 system: System Booted.
I 01/01/90 00:00:37 ports: port 1 is now on-line
I 01/01/90 00:00:37 ip: network enabled on 10.0.8.105
I 01/01/90 00:39:55 mgr: SME CONSOLE Session - MANAGER Mode established

---- Log events stored in memory 1-13.  Log events on screen 1-13.

Actions->  Back      Next page    Prev page    End      Help

Return to previous screen.
Use up/down arrow scroll log one line, left/right arrow keys to
change action selection, and <Enter> to execute action.
```

3.5 Download Screen

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                                Download OS

Current Firmware revision : E.08.XX

Method [TFTP] : TFTP
TFTP Server :
Remote File Name :

Actions->  Cancel      Edit      eXecute      Help

Select the file transfer method (TFTP and XMODEM are currently supported).
Use arrow keys to change field selection, <Space> to toggle field choices,
and <Enter> to go to Actions.
```

3.6 Run Setup

```
HP ProCurve Switch xxxxx                                01-Apr-2000
=====-- CONSOLE - MANAGER MODE -----
                                Switch Setup

System Name : HP ProCurve Switch xxxxx
System Contact :
Manager Password :                                     Confirm Password:
Logon Default : Menu                                 Time Zone [0] : 0
Community Name : public                             Spanning Tree Enabled [No] : No

Default Gateway : 10.0.8.1
TimeP Config [DHCP] : DHCP
IP Config [DHCP/Bootp] : Manual
IP Address : 10.0.8.80                               Subnet Mask : 255.255.248.0

Actions->  Cancel      Edit      eXecute      Help

Select the file transfer method (TFTP and XMODEM are currently supported).
Use arrow keys to change field selection, <Space> to toggle field choices,
and <Enter> to go to Actions.
```

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